

# PATENT ABSTRACTS OF JAPAN

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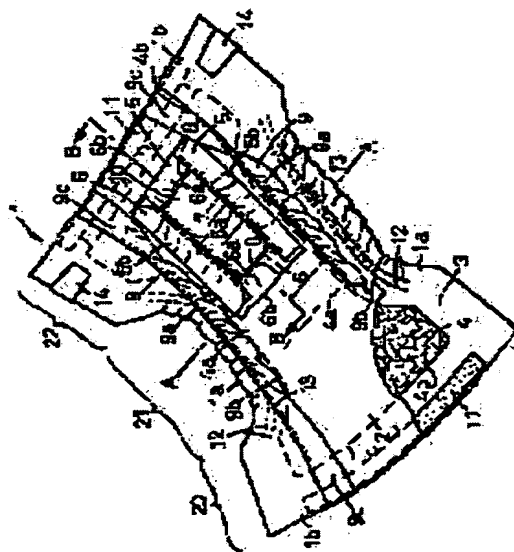
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## (54) DISPOSABLE DIAPER

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To prevent excreted feces from flowing into a region around front trunk and prevent feces from flowing and spreading in a region under the crotch and a region around rear trunk.

**SOLUTION:** A panel 1 has a pair of first upper face sheets 5 which oppose mutually on an upper face of the panel 1, are apart from each other, and extend in the longitudinal direction and a pair of second upper face sheets 6 which oppose mutually between the first upper face sheets 5, are apart from each other, and extend in the direction of width and is provided with an opening part 10 opened at least between a region below the crotch 21 and a region around rear trunk 22. The opening part 10 is formed in such a way that a fixed side part 5b extending in the longitudinal direction of the first upper face sheet 5 is fixed on the upper face of the panel 1, a fixed side part 6b extending in the direction of width of the second upper face sheet 6 is fixed on the upper face of the panel 1, and a part 5a extending from the fixed side part 5b of the first upper face sheet 5 to an inner side in the direction of the width of the panel 1 and a part 6a extending from the fixed side part 6b of the second upper face sheet 6 to an inner side in the longitudinal direction of the panel 1 are fixed in a region where they are overlapped. The first upper face sheet 5 and the second upper face sheet 6 have elastic retractility along a fringe part of the opening part 10.



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**CLAIMS**

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**[Claim(s)]**

[Claim 1] The edges-on-both-sides section which consists of laminated panels with which an absorbent core intervenes between a liquid permeability top sheet and a non-liquid-permeable nature backsheet, counters mutually, and is prolonged to a longitudinal direction, In the disposable diaper which has the ends edge which counters mutually and extends crosswise, and has the circumference region of a forward fuselage assembly, a circumference region of a back drum, and the length-from-the-crotch-to-the-cuff region located between the circumference regions of said order drum in said longitudinal direction The 1st top-face sheet of liquid resistance of a couple with which said panel carries out opposite alienation mutually crosswise [ said ] on the top face of said panel, and is prolonged to said longitudinal direction, It has opening which has the 2nd top-face sheet of liquid resistance of the couple which carries out opposite alienation mutually to said longitudinal direction between said 1st top-face sheets, and is prolonged crosswise [ said ], and carries out opening at least between said length-from-the-crotch-to-the-cuff region and the circumference region of said back drum. Each fixed side section prolonged to said longitudinal direction of said 1st top-face sheet fixes said opening on the top face of said panel. Each fixed side section prolonged crosswise [ of said 2nd top-face sheet / said ] fixes on the top face of said panel. And it is formed by fixing in the field in which the part of said 1st top-face sheet prolonged from the fixed side section of said 1st top-face sheet to the crosswise inside of said panel and the parts of said 2nd top-face sheet prolonged from the fixed side section of said 2nd top-face sheet to the longitudinal direction inside of said panel overlap mutually. Said diaper with which said 1st top-face sheet and said 2nd top-face sheet are characterized by having elastic elasticity along the edge of said opening.

[Claim 2] The diaper according to claim 1 which has fixed on the top face of said panel after each ends edge of said 1st top-face sheet which said each of 1st top-face sheet is prolonged between the ends edges of said panel, and is located in the ends edge of said panel has lodged to the crosswise inside of said panel.

[Claim 3] The diaper according to claim 1 or 2 with which each fixed side section of said 1st top-face sheet is located inside the edges-on-both-sides section of said core.

[Claim 4] claim 1 by which the leakproof cuff of the couple which has the free side edge section which has elastic elasticity and is prolonged to said longitudinal direction, the radical side edge section which fixed on the top face of said panel, and the longitudinal direction both ends located in the ends edge of said panel, and has a standing-up disposition upwards from the top face of said panel is formed between the edges-on-both-sides section of said panel, and the fixed side section of said 1st top-face sheet thru/or claim 3 -- a diaper given in either.

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**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to a disposable diaper.

[0002]

[Description of the Prior Art] JP,5-305109,A forms long opening in the center section of the skin reliance top-face sheet to the longitudinal direction, and is indicating the disposable diaper which attached annularly the elastic member expanded and contracted to a longitudinal direction along the periphery of the opening.

[0003] JP,8-322878,A -- an absorbent core -- a length-from-the-crotch-to-the-cuff region -- setting -- longitudinal direction order -- dividing into two -- a necessary distance -- estranging -- the alienation -- a part -- a top sheet and a backseat -- joining -- alienation -- the disposable diaper with which the flap prolonged crosswise is formed in the top face of a part is indicated.

[0004]

[Problem(s) to be Solved by the Invention] Although the diaper of JP,5-305109,A disclosure has the intention of making excrement flow into opening certainly, when excrement is a loose passage, even if excreted in the length-from-the-crotch-to-the-cuff region of a diaper, or the circumference region of a back drum, it carries out diffusion floating of the top sheet top, arrives at the circumference region of a forward fuselage assembly, and may soil the urinary organs and genitals.

[0005] Although it has the intention of the diaper of JP,8-322878,A disclosure preventing floating to the circumference region of a forward fuselage assembly of a loose passage, the excreted facilities cannot be shut up near the elimination location, but facilities may carry out floating diffusion of the top sheet top in a length-from-the-crotch-to-the-cuff region and the circumference region of a back drum.

[0006] The technical problem of this invention is to offer the disposable diaper in which the excreted facilities do not flow in the circumference region of a forward fuselage assembly, and facilities do not carry out floating diffusion in a length-from-the-crotch-to-the-cuff region or the circumference region of a back drum.

[0007]

[Means for Solving the Problem] The edges-on-both-sides section which this invention for solving the technical problem mentioned above consists of laminated panels with which an absorbent core intervenes between a liquid permeability top sheet and a non-liquid-permeable nature backseat, counters mutually, and is prolonged to a longitudinal direction, It is in improving the disposable diaper which has the ends edge which counters mutually and extends crosswise, and has the circumference region of a forward fuselage assembly, a circumference region of a back drum, and the length-from-the-crotch-to-the-cuff region located between the circumference regions of said order drum in said longitudinal direction.

[0008] The 1st top-face sheet of liquid resistance of the couple which said panel carries out opposite alienation of the place by which this invention concerning amelioration is characterized mutually crosswise [ said ] on the top face of said panel, and is prolonged to said longitudinal direction, It has opening which has the 2nd top-face sheet of liquid resistance of the couple which carries out opposite alienation mutually to said longitudinal direction between said 1st top-face sheets, and is prolonged crosswise [ said ], and carries out opening at least between said length-from-the-crotch-to-

the-cuff region and the circumference region of said back drum. Each fixed side section prolonged to said longitudinal direction of said 1st top-face sheet fixes said opening on the top face of said panel. Each fixed side section prolonged crosswise [ of said 2nd top-face sheet / said ] fixes on the top face of said panel. And it is formed by fixing in the field in which the part of said 1st top-face sheet prolonged from the fixed side section of said 1st top-face sheet to the crosswise inside of said panel and the parts of said 2nd top-face sheet prolonged from the fixed side section of said 2nd top-face sheet to the longitudinal direction inside of said panel overlap mutually. Said 1st top-face sheet and said 2nd top-face sheet are to have elastic elasticity along the edge of said opening.

[0009] As an example of the gestalt of operation of this invention, said each of 1st top-face sheet was prolonged between the ends edges of said panel, and each ends edge of said 1st top-face sheet located in the ends edge of said panel has fixed on the top face of said panel in the condition of having lodged to the crosswise inside of said panel.

[0010] As other examples of the gestalt of operation of this invention, each fixed side section of said 1st top-face sheet is located inside the edges-on-both-sides section of said core.

[0011] As other examples of the gestalt of operation of this invention, between the edges-on-both-sides section of said panel, and the fixed side section of said 1st top-face sheet The leakproof cuff of the couple which has the free side edge section which has elastic elasticity and is prolonged to said longitudinal direction, the radical side edge section which fixed on the top face of said panel, and the longitudinal direction both ends located in the ends edge of said panel, and has a standing-up disposition upwards from the top face of said panel is formed.

[0012]

[Embodiment of the Invention] It is as follows when the detail of the disposable diaper concerning this invention is explained with reference to an attached drawing.

[0013] Drawing 1 is the partial fracture perspective view of the diaper which consisted of laminated panels 1. A panel 1 intervenes between the liquid permeability top sheet 2, the non-liquid-permeable nature backseat 3, and the top sheet 2 and a backseat 3, and is formed with the absorbent core 4 joined by one [ at least ] inner surface of these sheets 2 and 3. A panel 1 has edges-on-both-sides section 1a which had the circumference region 20 of a forward fuselage assembly, the circumference region 22 of a back drum, and the length-from-the-crotch-to-the-cuff region 21 located among the circumference regions 20 and 22 of these order drum in the longitudinal direction which intersects the cross direction, countered it mutually, has been prolonged to the longitudinal direction, and curves to a way among panels 1 in the length-from-the-crotch-to-the-cuff region 21, and ends edge 1b which counters mutually and is prolonged crosswise.

[0014] A panel 1 carries out opposite alienation mutually crosswise on the top face of a panel 1, is located in the 1st top-face sheet 5 of liquid resistance of the couple prolonged to a longitudinal direction between the length-from-the-crotch-to-the-cuff region 21 and the circumference region 22 of a back drum, and the length-from-the-crotch-to-the-cuff region 21 and the circumference region 22 of a back drum, and has the opening 10 formed with the 2nd top-face sheet 6 of liquid resistance of the couple prolonged crosswise between the 1st top-face sheets 5. opening 10 -- the length-from-the-crotch-to-the-cuff region 21 -- opening is mostly carried out from the center section in between near the edge section 1b of the circumference region 22 of a back drum. The elastic member 7 prolonged to a longitudinal direction is attached in partial 5a prolonged to the crosswise inside from fixed side section 5b of the 1st top-face sheet 5 in the state of expanding. The elastic member 8 prolonged crosswise is attached in partial 6a prolonged to the longitudinal direction inside from fixed side section 6b of the 2nd top-face sheet 6 in the state of expanding.

[0015] It is located between edges-on-both-sides section 1a of a panel 1, and the 1st top-face sheet 5, and the leakproof cuff 9 of the couple prolonged to a longitudinal direction near the outside of edges-on-both-sides section 4a of a core 4 is attached in the top face of a panel 1. A cuff 9 has free side edge section 9a which has fixed to neither of the top sheet 2 and a backseat 3 in the length-from-the-crotch-to-the-cuff region 21, radical side edge section 9b prolonged to a longitudinal direction, and longitudinal direction both-ends 9c located in the circumference regions 20 and 22 of an order drum. The configuration of the part of a cuff 9 and both-ends 9c which are prolonged from radical side edge section 9b to the method of the outside of the cross direction is the same as the configuration of the outside region of a backseat 3.

[0016] Radical side edge section 9b was located in the outside of edges-on-both-sides section 4a of a core 4, and the cuff 9 fixed on the top face of the top sheet 2, and after both-ends 9c has lodged on the outside of a panel 1, it has fixed on the top face of the top sheet 2. The elastic member 13 prolonged to a longitudinal direction is attached in free side edge section 9a of a cuff 9 in the state of expanding. since a panel 1 \*\*\*\*s the inner surface inside and is curving to the longitudinal direction by a diagram -- a cuff 9 -- an elastic member 13 -- it has stood up to the upper part of a panel 1 by each contraction.

[0017] The elastic member 11 for the circumferences of a foot prolonged to a longitudinal direction in edges-on-both-sides section 1a of a panel 1 in the location of the outside of a cuff 9 intervenes between the top sheet 2 and a backseat 3, and is attached at least in one side of these sheets 2 and 3 in the state of expanding. The elastic member 12 for peripheries prolonged crosswise in ends edge 1b of a panel 1 intervenes between a backseat 3 and the part of a cuff 9, and is attached at least in one side of them 3 and 9 in the state of expanding. In the circumference region 22 of a back drum of a panel 1, the tape fastener 14 is prolonged from edges-on-both-sides section 1a of a panel 1 to the crosswise inside.

[0018] The target tape used as the firm attachment region of the tape fastener 14 is attached, and if it attaches firmly to a target tape through the binder to which the tape fastener 14 was applied by the inner surface, circumference opening of a drum and circumference opening of a foot of a left Uichi pair will be formed in the outside surface of the panel 1 in the circumference region 20 of a forward fuselage assembly (not shown).

[0019] Drawing 2 and 3 are the A-A end-of-line side Fig. of drawing 1, and the B-B line view sectional view of drawing 1 R> 1. Fixed side section 5b prolonged to the longitudinal direction of a panel 1 was located inside edges-on-both-sides section 4a of a core 4, and has fixed the 1st top-face sheet 5 through adhesives (not shown) on the top face of the top sheet 2. Fixed side section 6b prolonged crosswise [ of a panel 1 ] fixes the 2nd top-face sheet 6 located in the length-from-the-crotch-to-the-cuff region 21 through adhesives (not shown) on the top face of the top sheet 2. Fixed side section 6b prolonged crosswise [ of a panel 1 ] has fixed the 2nd top-face sheet 6 located in the circumference region 22 of a back drum through adhesives (not shown) on the top face of the top sheet 2 by the inside of edge section 4b of a core 4.

[0020] The part of these parts 5a and 6a which overlap mutually has fixed mutually partial 5a of the 1st top-face sheet 5, and partial 6a of the 2nd top-face sheet 6 through adhesives (not shown) in the condition of having turned the 1st top-face sheet 5 up. the parts 5a and 6a of the 1st top-face sheet 5 and the 2nd top-face sheet 6 -- each is bent in the inside of a panel 1 and elastic members 7 and 8 are covered by the parts 5a and 6a of these sheets 5 and 6.

[0021] The pocket P1 in which the 1st top-face sheet 5 and the top sheet 2 carry out opening toward the crosswise inside of a panel 1 is formed, and the pocket P2 in which the 2nd top-face sheet 6 and the top sheet 2 carry out opening toward the longitudinal direction inside of a panel 1 is formed.

[0022] The top sheet 2 finished near the outside of edges-on-both-sides section 4a of a core 4, and the part prolonged to a crosswise outside has fixed the panel 1 of each other from radical side edge section 9b of the outside region of the backseat 3 prolonged from the outside region of the top sheet 2 to a crosswise outside, and a cuff 9. The free side edge section 9a is bent in the inside of a panel 1, and, as for the cuff 9, the elastic member 13 is covered by free side edge section 9a of a cuff 9.

[0023] A panel 1 can absorb urine by edges-on-both-sides section 4a of a core 4 located between a cuff 9 and the 1st top-face sheet 5, even if the excreted urine flows between a cuff 9 and the 1st top-face sheets 5, since fixed side section 5b of the 1st top-face sheet 5 has fixed on the top sheet 2 by the inside of edges-on-both-sides section 4a of a core 4.

[0024] A panel 1 can absorb urine by edge section 4b of a core, even if the excreted urine flows to the edge section 1b side of a panel 1, since fixed side section 6b of the 2nd top-face sheet 6 located in the circumference region 22 of a back drum has fixed on the top sheet 2 by the inside of edge section 4b of a core 4.

[0025] Drawing 4 and 5 are the partial fracture perspective view of the panel 1 of a mode by which drawing 1 differs, and the C-C line view sectional view of drawing 4. The panel 1 is the same as the panel 1 of drawing 1 in the point of having the core 4 which intervenes between the top sheet 2 and a backseat 3, and having the leakproof cuff 9 mostly prolonged from a center section to the opening 10

of the length-from-the-crotch-to-the-cuff region 21 which carries out opening, and the longitudinal direction of a panel 1 in between near the edge section 1b of the circumference region 22 of a back drum.

[0026] The 1st top-face sheet 5 carried out opposite alienation mutually crosswise on the top face of a panel 1, and is prolonged between ends edge 1b of a panel 1. Ends edge 5c of the 1st top-face sheet 5 located in ends edge 1b of a panel 1 has fixed on the top sheet 2 in the condition of having lodged to the inside of a panel 1. The elastic member 7 prolonged to a longitudinal direction is attached in partial 5a prolonged to the crosswise inside of a panel 1 from fixed side section 5b of the 1st top-face sheet 5 in the state of expanding. The 2nd top-face sheet 6 was located in the length-from-the-crotch-to-the-cuff region 21 and the circumference region 22 of a back drum, and is prolonged crosswise between the 1st top-face sheets 5. The elastic member 8 prolonged crosswise is attached in partial 6a prolonged to the longitudinal direction inside of a panel 1 from fixed side section 6b of the 2nd top-face sheet 6 in the state of expanding. The part of partial 5a of the 1st top-face sheet 5 and the partial 6a of the 2nd top-face sheet 6 which overlap mutually has fixed mutually in the condition of having turned the 1st top-face sheet 5 up.

[0027] As for the panel 1 of drawing 4, the elastic member 7 is prolonged between ends edge 1b of a panel 1. If a panel 1 \*\*\*\*s the inner surface inside and curves to a longitudinal direction, an elastic member 7 can be contracted among ends edge 1b of a panel 1. Therefore, part 5b of the 1st top-face sheet 5 tends to stand up to the upper part of a panel 1. Part 6b of the 2nd top-face sheet 6 is raised to the upper part of a panel 1 with standing up of part 5b of the 1st top-face sheet 5. Pockets P1 and P2 can open opening greatly because the 1st top-face sheet 5 and the 2nd top-face sheet 6 stand up, and a lot of excrement can be held in pockets P1 and P2.

[0028] the sheet of liquid permeability [ sheet / 2 / top ], such as a nonwoven fabric and a puncturing plastic film, -- it is liquid permeability preferably and a hydrophobic sheet is used. a backseat 3 -- the lamination sheet of the plastic film of non-liquid-permeable nature or a plastic film, and a hydrophobic nonwoven fabric -- the sheet of aeration non-liquid-permeable nature is used preferably.

[0029] The nonwoven fabric of aeration non-liquid-permeable nature or the elasticity nonwoven fabric of aeration non-liquid-permeable nature is used for the leakproof cuff 9 and a 1st and 2 top-face sheet. When it fixes to a panel 1 where a cuff 9 is expanded to a longitudinal direction, when using an elasticity nonwoven fabric for a cuff 9, and using an elasticity nonwoven fabric for the 1st and 2 top-face sheets 5 and 6, it is in the condition of having expanded the 1st top-face sheet 5 to the longitudinal direction, and the 2nd top-face sheet 6 is fixed to a panel 1 in the condition of having elongated crosswise. Installation of the elastic members 7, 8, and 13 to free side edge section 9a of a cuff 9 and the parts 5a and 6a of a 1st and 2 top-face sheet can be excluded.

[0030] As a nonwoven fabric, nonwoven fabrics, such as a span ball race, needle punch, melt-blown \*\* thermal bond, a span pound, and chemical bond, can be used. as eyes -- 15 - 80 g/m2 -- it is 20 - 60 g/m2 preferably. As configuration fiber of a nonwoven fabric, the bicomponent fiber of each fiber of polyolefine system, polyester system, and polyamide system \*\*, polyethylene/polypropylene, or polyester etc. can be used.

[0031] A core 4 is the mixture of fluff pulp and a superabsorbency polymer particle, it is compressed into necessary thickness and the whole is covered with water penetration sheets, such as a tissue paper. The technique of heat joining to each part material can be used for fixing of a sheet, and installation of an elastic member besides adhesives, such as hot melt adhesive, or a binder.

[0032]

[Effect of the Invention] According to the disposable diaper concerning this invention, since it is held at the pocket which a 1st and 2 top-face sheet and a top sheet form, a top sheet is penetrated and it is absorbed by the core, excrement held from opening, such as a loose passage and solid facilities, can prevent being flowed and spread in that those excrement flows to the circumference region of a forward fuselage assembly, a length-from-the-crotch-to-the-cuff region, and an after periphery region. Since urine and facilities are separated by the 1st and 2 top-face sheet among excrement, displeasure by their being mixed is not given.

[Translation done.]



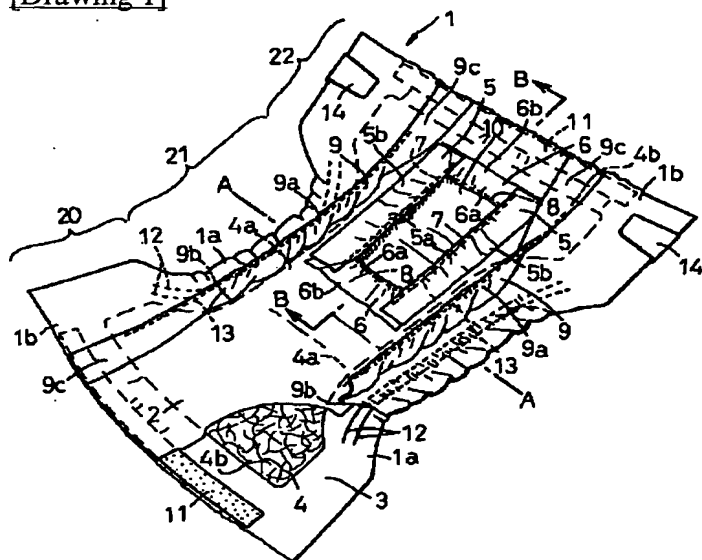
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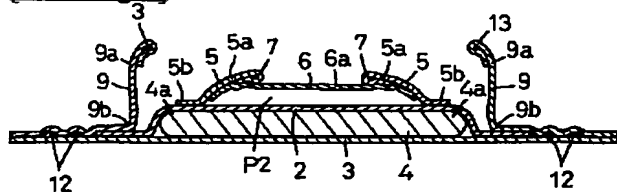
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## DRAWINGS

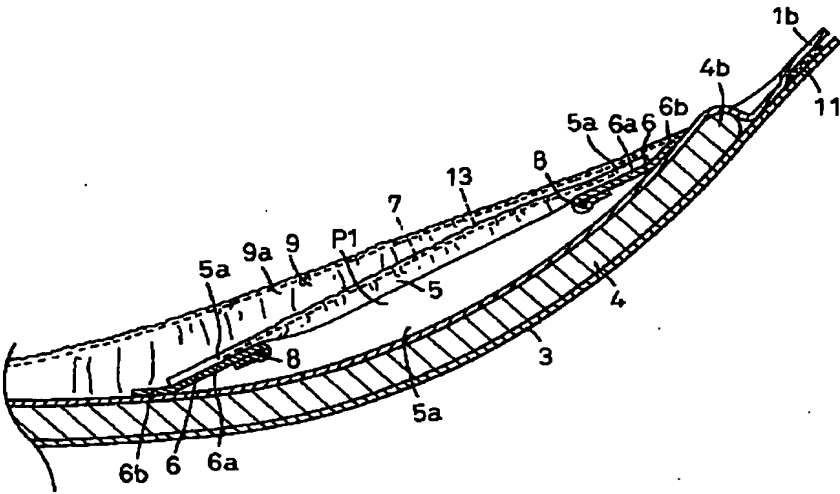
[Drawing 1]



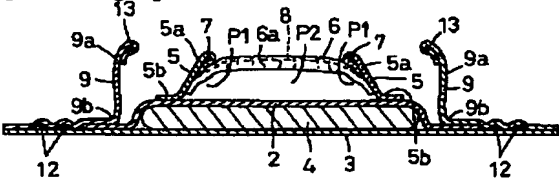
[Drawing 2]



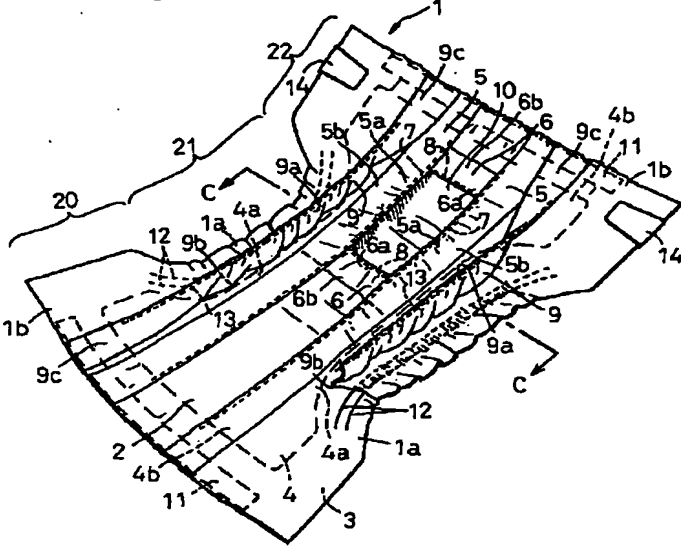
[Drawing 3]



[Drawing 5]



[Drawing 4]



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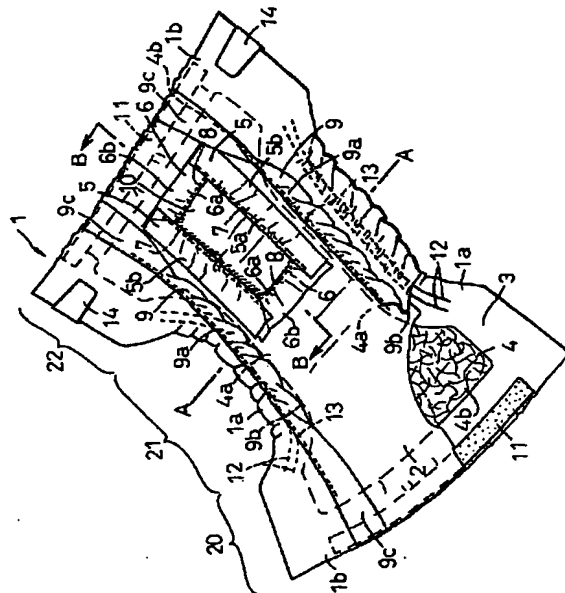
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(54) 【発明の名称】 使い捨ておむつ

(57) 【要約】

【課題】 排泄された便が前胴周り域に流動することはなく、股下域や後胴周り域において便が流動拡散することがない使い捨ておむつを提供する。

【解決手段】 パネル1が、パネル1の上面で互に対向離間して長手方向へ延びる一対の第1上面シート5と、第1上面シート5の間で互に対向離間して幅方向へ延びる一対の第2上面シート6とを有して少なくとも股下域21と後胴周り域22との間で開口する開口部10を備え、開口部10は、第1上面シート5の長手方向へ延びる固定側部5bがパネル1の上面に固着され、第2上面シート6の幅方向へ延びる固定側部6bがパネル1の上面に固着され、かつ、第1上面シート5の固定側部5bからパネル1の幅方向内側へ延びる部分5aと第2上面シート6の固定側部6bからパネル1の長手方向内側へ延びる部分6aとが重なり合う領域で固着されることにより形成され、第1上面シート5と第2上面シート6とが、開口部10の縁部に沿って弾性的な伸縮性を有する。



## 【特許請求の範囲】

【請求項1】 透液性トップシートと不透液性バックシートとの間に吸液性コアが介在する積層パネルで構成され、互いに対向して長手方向へ延びる両側縁部と、互いに対向して幅方向へ延びる両端縁部とを有し、前記長手方向に前胴周り域と、後胴周り域と、前記前後胴周り域の間に位置する股下域とを有する使い捨ておむつにおいて、

前記パネルが、前記パネルの上面で前記幅方向へ互いに対向離間して前記長手方向へ延びる一対の液抵抗性第1上面シートと、前記第1上面シートの間で前記長手方向へ互いに対向離間して前記幅方向へ延びる一対の液抵抗性第2上面シートとを有して少なくとも前記股下域と前記後胴周り域との間で開口する開口部を備え、

前記開口部は、前記第1上面シートの前記長手方向へ延びる固定側部それぞれが前記パネルの上面に固着され、前記第2上面シートの前記幅方向へ延びる固定側部それぞれが前記パネルの上面に固着され、かつ、前記第1上面シートの固定側部から前記パネルの幅方向内側へ延びる前記第1上面シートの部分と前記第2上面シートの固定側部から前記パネルの長手方向内側へ延びる前記第2上面シートの部分とが互いに重なり合う領域で固着されることにより形成され、

前記第1上面シートと前記第2上面シートとが、前記開口部の縁部に沿って弾性的な伸縮性を有することを特徴とする前記おむつ。

【請求項2】 前記第1上面シートそれぞれが、前記パネルの両端縁部の間に延び、前記パネルの両端縁部に位置する前記第1上面シートの両端縁部それぞれが、前記パネルの幅方向内側へ倒伏された状態で前記パネルの上面に固着されている請求項1記載のおむつ。

【請求項3】 前記第1上面シートの固定側部それぞれが、前記コアの両側縁部の内側に位置している請求項1または請求項2記載のおむつ。

【請求項4】 前記パネルの両側縁部と前記第1上面シートの固定側部との間には、弾性的な伸縮性を有して前記長手方向へ延びる自由側縁部と前記パネルの上面に固着された基側縁部と前記パネルの両端縁部に位置する長手方向両端部とを有して前記パネルの上面から上方へ起立性向を有する一対の防漏カフが形成されている請求項1ないし請求項3いずれかに記載のおむつ。

## 【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、使い捨ておむつに関する。

【0002】

【従来の技術】特開平5-305109号公報は、肌当て上面シートの中央部にその長手方向へ長い開口部を形成し、その開口部の周縁に沿って長手方向へ伸縮する弾性部材を環状に取り付けた使い捨ておむつを開示してい

る。

【0003】特開平8-322878号公報は、吸液性コアが股下域において長手方向前後に二分して所要の距離だけ離間し、その離間部位でトップシートとバックシートとが接合し、離間部位の上面に幅方向へ延びるフラップが形成されている使い捨ておむつを開示している。

【0004】

【発明が解決しようとする課題】特開平5-305109号公報開示のおむつは、排泄物を開口部に確実に流入させることを意図しているが、排泄物が軟便の場合には、おむつの股下域または後胴周り域で排泄されても、トップシート上を拡散流動して前胴周り域に達し、泌尿器や性器を汚すことがある。

【0005】特開平8-322878号公報開示のおむつは、軟便の前胴周り域への流動を防止することを意図しているが、排泄された便を排泄位置近傍で閉じ込めておくことはできず、便が股下域および後胴周り域においてトップシート上を流動拡散してしまうことがある。

【0006】本発明の課題は、排泄された便が前胴周り域に流動することではなく、股下域や後胴周り域において便が流動拡散することがない使い捨ておむつを提供することにある。

【0007】

【課題を解決するための手段】前述した課題を解決するための本発明は、透液性トップシートと不透液性バックシートとの間に吸液性コアが介在する積層パネルで構成され、互いに対向して長手方向へ延びる両側縁部と、互いに対向して幅方向へ延びる両端縁部とを有し、前記長手方向に前胴周り域と、後胴周り域と、前記前後胴周り域の間に位置する股下域とを有する使い捨ておむつを改良することにある。

【0008】改良に係る本発明が特徴とするところは、前記パネルが、前記パネルの上面で前記幅方向へ互いに対向離間して前記長手方向へ延びる一対の液抵抗性第1上面シートと、前記第1上面シートの間で前記長手方向へ互いに対向離間して前記幅方向へ延びる一対の液抵抗性第2上面シートとを有して少なくとも前記股下域と前記後胴周り域との間で開口する開口部を備え、前記開口部は、前記第1上面シートの前記長手方向へ延びる固定側部それぞれが前記パネルの上面に固着され、前記第2上面シートの前記幅方向へ延びる固定側部それぞれが前記パネルの上面に固着され、かつ、前記第1上面シートの固定側部から前記パネルの幅方向内側へ延びる前記第1上面シートの部分と前記第2上面シートの固定側部から前記パネルの長手方向内側へ延びる前記第2上面シートの部分とが互いに重なり合う領域で固着されることにより形成され、前記第1上面シートと前記第2上面シートとが、前記開口部の縁部に沿って弾性的な伸縮性を有することにある。

【0009】本発明の実施の形態の一例としては、前記

第1上面シートそれぞれが、前記パネルの両端縁部の間に延び、前記パネルの両端縁部に位置する前記第1上面シートの両端縁部それぞれが、前記パネルの幅方向内側へ倒伏された状態で前記パネルの上面に固着されている。

【0010】本発明の実施の形態の他の一例としては、前記第1上面シートの固定側部それぞれが、前記コアの両側縁部の内側に位置している。

【0011】本発明の実施の形態の他の一例として、前記パネルの両側縁部と前記第1上面シートの固定側部との間には、弾性的な伸縮性を有して前記長手方向へ延びる自由側縁部と前記パネルの上面に固着された基側縁部と前記パネルの両端縁部に位置する長手方向両端部とを有して前記パネルの上面から上方へ起立性を有する一対の防漏カフが形成されている。

【0012】

【発明の実施の形態】添付の図面を参照して、本発明に係る使い捨ておむつの詳細を説明すると、以下のとおりである。

【0013】図1は、積層パネル1で構成されたおむつの部分破断斜視図である。パネル1は、透液性トップシート2と、不透液性バックシート3と、トップシート2とバックシート3との間に介在し、それらシート2、3のうちの少なくとも一方の内面に接合された吸液性コア4とで形成されている。パネル1は、幅方向と交差する長手方向に前胴周り域20と、後胴周り域22と、それら前後胴周り域20、22の間に位置する股下域21とを有し、互いに対向して長手方向へ延びていて股下域21においてパネル1の内方へ湾曲する両側縁部1aと、互いに対向して幅方向へ延びる両端縁部1bとを有する。

【0014】パネル1は、パネル1の上面で幅方向へ互いに対向離間し、股下域21と後胴周り域22との間で長手方向へ延びる一対の液抵抗性第1上面シート5と、股下域21と後胴周り域22とに位置し、第1上面シート5の間で幅方向へ延びる一対の液抵抗性第2上面シート6とで画成された開口部10を有する。開口部10は、股下域21のほぼ中央部から後胴周り域22の端縁部1b近傍の間に開口している。第1上面シート5の固定側部5bから幅方向内側へ延びる部分5aには、長手方向へ延びる弾性部材7が伸長状態で取り付けられている。第2上面シート6の固定側部6bから長手方向内側へ延びる部分6aには、幅方向へ延びる弾性部材8が伸長状態で取り付けられている。

【0015】パネル1の上面には、パネル1の両側縁部1aと第1上面シート5との間に位置し、コア4の両側縁部4aの外側近傍で長手方向へ延びる一対の防漏カフ9が取り付けられている。カフ9は、股下域21においてトップシート2とバックシート3とのいずれにも固着されていない自由側縁部9aと、長手方向へ延びる基側

縁部9bと、前後胴周り域20、22に位置する長手方向両端部9cとを有する。基側縁部9bから幅方向外方へ延びるカフ9の部分と両端部9cとの形状は、バックシート3の外側域の形状と同じである。

【0016】カフ9は、基側縁部9bがコア4の両側縁部4aの外側に位置してトップシート2の上面に固着され、両端部9cがパネル1の外側に倒伏された状態でトップシート2の上面に固着されている。カフ9の自由側縁部9aには、長手方向へ延びる弾性部材13が伸長状態で取り付けられている。図では、パネル1がその内面を内側にして長手方向に湾曲しているため、カフ9が、弾性部材13それぞれの収縮によってパネル1の上方へ起立している。

【0017】パネル1の両側縁部1aには、カフ9の外側の位置に長手方向へ延びる脚周り用弾性部材11が、トップシート2とバックシート3との間に介在し、それらシート2、3のうちの少なくとも一方に伸長状態で取り付けられている。パネル1の両端縁部1bには、幅方向へ延びる胴回り用弾性部材12が、バックシート3とカフ9の部分との間に介在し、それら3、9のうちの少なくとも一方に伸長状態で取り付けられている。パネル1の後胴周り域22には、テープファスナ14がパネル1の両側縁部1aから幅方向内側へ延びている。

【0018】前胴周り域20におけるパネル1の外面には、テープファスナ14の止着域となるターゲットテープが取り付けられ、テープファスナ14をその内面に塗布された粘着剤を介して、ターゲットテープに止着すると、胴周り開口と左右一対の脚周り開口とが形成される(図示せず)。

【0019】図2、3は、図1のA-A線端面図と、図1のB-B線矢視断面図である。第1上面シート5は、パネル1の長手方向へ延びる固定側部5bがコア4の両側縁部4aの内側に位置してトップシート2の上面に接着剤(図示せず)を介して固着されている。股下域21に位置する第2上面シート6は、パネル1の幅方向へ延びる固定側部6bがトップシート2の上面に接着剤(図示せず)を介して固着され、後胴周り域22に位置する第2上面シート6は、パネル1の幅方向へ延びる固定側部6bがコア4の端縁部4bの内側でトップシート2の上面に接着剤(図示せず)を介して固着されている。

【0020】第1上面シート5の部分5aと第2上面シート6の部分6aとは、それら部分5a、6aのうちの互いに重なり合う部位が、第1上面シート5を上にした状態で接着剤(図示せず)を介して互いに固着されている。第1上面シート5と第2上面シート6との部分5a、6aそれぞれはパネル1の内側へ折曲され、弾性部材7、8がそれらシート5、6の部分5a、6aに被覆されている。

【0021】第1上面シート5とトップシート2とがパネル1の幅方向内側へ向かって開口するポケットP1を

形成し、第2上面シート6とトップシート2とがパネル1の長手方向内側へ向かって開口するポケットP2を形成している。

【0022】パネル1は、トップシート2がコア4の両側縁部4aの外側近傍で終わり、トップシート2の外側域から幅方向外側へ延びるバックシート3の外側域とカフ9の基側縁部9bから幅方向外側へ延びる部分とが互いに固着されている。カフ9は、その自由側縁部9aがパネル1の内側へ折曲され、弾性部材13がカフ9の自由側縁部9aに被覆されている。

【0023】パネル1は、第1上面シート5の固定側部5bがコア4の両側縁部4aの内側でトップシート2に固着されているので、排泄された尿がカフ9と第1上面シート5の間を流動しても、カフ9と第1上面シート5の間に位置するコア4の両側縁部4aで尿を吸収することができる。

【0024】パネル1は、後胴周り域22に位置する第2上面シート6の固定側部6bがコア4の端縁部4bの内側でトップシート2に固着されているので、排泄された尿がパネル1の端縁部1bの側へ流動しても、コアの端縁部4bで尿を吸収することができる。

【0025】図4、5は、図1とは異なる態様のパネル1の部分破断斜視図と、図4のC-C線矢視断面図である。パネル1は、トップシート2とバックシート3との間に介在するコア4を有し、股下域21のほぼ中央部から後胴周り域22の端縁部1b近傍の間に開口する開口部10と、パネル1の長手方向へ延びる防漏カフ9とを有する点において図1のパネル1と同一である。

【0026】第1上面シート5は、パネル1の上面で幅方向へ互いに対向離間し、パネル1の両端縁部1bの間に延びている。パネル1の両端縁部1bに位置する第1上面シート5の両端縁部5cは、パネル1の内側へ倒伏された状態でトップシート2に固着されている。第1上面シート5の固定側部5bからパネル1の幅方向内側へ延びる部分5aには、長手方向へ延びる弾性部材7が伸長状態で取り付けられている。第2上面シート6は、股下域21と後胴周り域22とに位置し、第1上面シート5の間で幅方向へ延びている。第2上面シート6の固定側部6bからパネル1の長手方向内側へ延びる部分6aには、幅方向へ延びる弾性部材8が伸長状態で取り付けられている。第1上面シート5の部分5aと第2上面シート6の部分6aとのうちの互いに重なり合う部位が、第1上面シート5を上にした状態で互いに固着されている。

【0027】図4のパネル1は、弾性部材7がパネル1の両端縁部1bの間に延びている。パネル1がその内面を内側にして長手方向に湾曲すると、弾性部材7はパネル1の両端縁部1b間で収縮することができる。ゆえに、第1上面シート5の部位5bがパネル1の上方へ起立し易い。第2上面シート6の部位6bは、第1上面シ

ート5の部位5bの起立にともなってパネル1の上方へ持ち上げられる。第1上面シート5と第2上面シート6とが起立することでポケットP1、P2が大きく口を開け、多量の排泄物をポケットP1、P2に収容することができる。

【0028】トップシート2には、不織布や開孔プラスチックフィルム等の透液性のシート、好ましくは透液性であって疎水性のシートが使用される。バックシート3には、不透液性のプラスチックフィルムまたはプラスチックフィルムと疎水性不織布とのラミネートシート、好ましくは通気不透液性のシートが使用される。

【0029】防漏カフ9と第1、2上面シートとには、通気不透液性の不織布または通気不透液性の伸縮性不織布が使用される。カフ9に伸縮性不織布を使用する場合は、カフ9を長手方向へ伸長させた状態でパネル1に固定し、第1、2上面シート5、6に伸縮性不織布を使用する場合は、第1上面シート5を長手方向へ伸長させた状態で、第2上面シート6を幅方向へ伸長した状態でパネル1に固定する。カフ9の自由側縁部9aと第1、2上面シートの部分5a、6aとに対する弾性部材7、8、13の取り付けを省くことができる。

【0030】不織布としては、スパンレース、ニードルパンチ、メルトブローン、サーマルボンド、スパンボンド、ケミカルボンド等の不織布を使用することができる。目付としては、 $15 \sim 80 \text{ g/m}^2$ 、好ましくは、 $20 \sim 60 \text{ g/m}^2$ である。不織布の構成繊維としては、ポリオレフィン系、ポリエステル系、ポリアミド系、の各繊維、ポリエチレン/ポリプロピレンまたはポリエステル系の複合繊維等を使用することができる。

【0031】コア4は、フラップバルブと高吸収性ポリマー粒子との混合物であり、所要の厚みに圧縮され、全体がティッシュペーパー等の透水シートによって被覆されている。シートの固着、弾性部材の取り付けには、ホットメルト接着剤等の接着剤や粘着剤の他に、各部材に対する熱溶着の技術を利用することができる。

【0032】

【発明の効果】本発明に係る使い捨ておむつによれば、開口部から収容された軟便や固形の便等の排泄物は、第1、2上面シートとトップシートとが形成するポケットに保持され、トップシートを透過してコアに吸収されるので、それらの排泄物が前胴回り域へ流動したりすることや股下域と後胴回り域とで流動、拡散することを防止することができる。排泄物のうち尿と便とが第1、2上面シートによって分離されるので、それらが混じり合うことによる不快感を与えることがない。

【図面の簡単な説明】

【図1】おむつの部分破断斜視図。

【図2】図1のA-A線端面図。

【図3】図1のB-B線断面図。

【図4】図1とは異なる態様のおむつの斜視図。

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【図5】図4のC-C線断面図。

【符号の説明】

- 1 積層パネル  
 1 a 両側縁部  
 1 b 両端縁部  
 2 透液性トップシート  
 3 不透液性バックシート  
 4 吸液性コア  
 4 a 両側縁部  
 5 第1上面シート  
 5 a 部分  
 5 b 固定側部  
 5 c 両端縁部

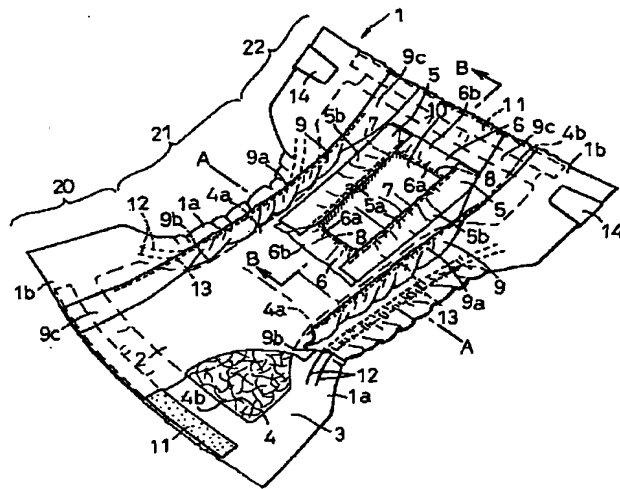
\* 6

- 6 a 部分  
 6 b 固定側部  
 7 弾性部材  
 8 弾性部材  
 9 防漏カフ  
 9 a 自由側縁部  
 9 b 基側縁部  
 9 c 両端部  
 10 10 開口部  
 20 前胴周り域  
 21 股下域  
 \* 22 後胴周り域

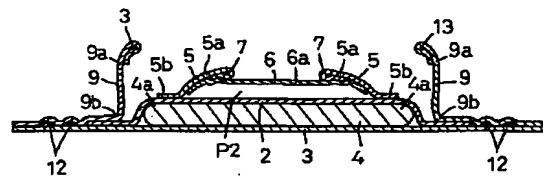
8

第2上面シート

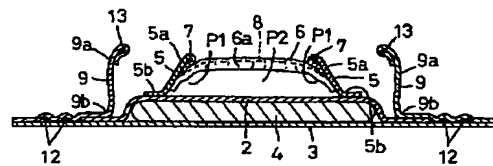
【図1】



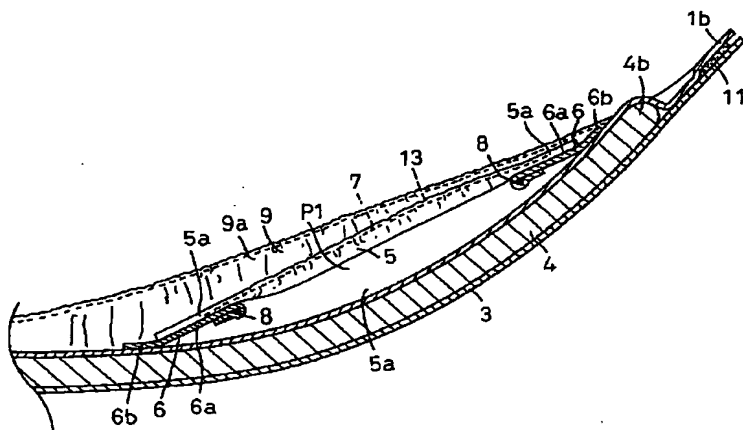
【図2】



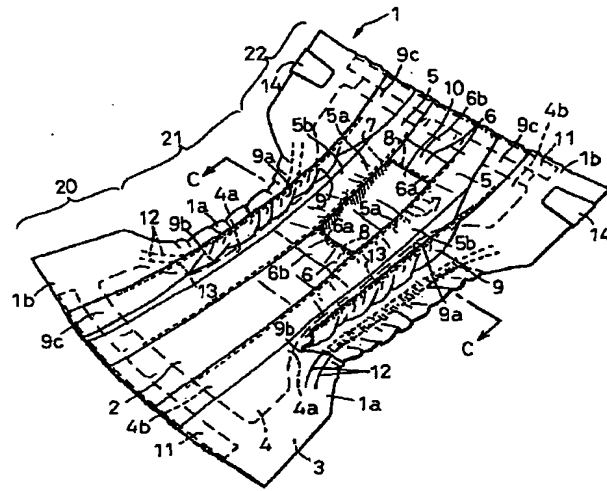
【図5】



【図3】



【図4】



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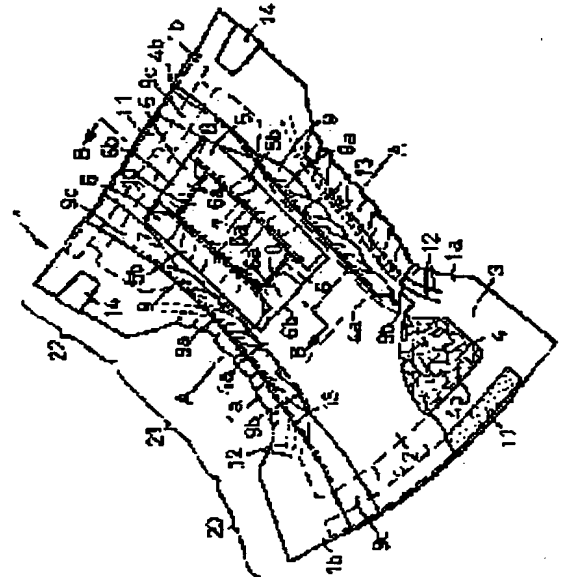
(72)Inventor : MISHIMA YOSHINOBU  
OTSUBO TOSHIKUMI

## (54) DISPOSABLE DIAPER

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To prevent excreted feces from flowing into a region around front trunk and prevent feces from flowing and spreading in a region under the crotch and a region around rear trunk.

**SOLUTION:** A panel 1 has a pair of first upper face sheets 5 which oppose mutually on an upper face of the panel 1, are apart from each other, and extend in the longitudinal direction and a pair of second upper face sheets 6 which oppose mutually between the first upper face sheets 5, are apart from each other, and extend in the direction of width and is provided with an opening part 10 opened at least between a region below the crotch 21 and a region around rear trunk 22. The opening part 10 is formed in such a way that a fixed side part 5b extending in the longitudinal direction of the first upper face sheet 5 is fixed on the upper face of the panel 1, a fixed side part 6b extending in the direction of width of the second upper face sheet 6 is fixed on the upper face of the panel 1, and a part 5a extending from the fixed side part 5b of the first upper face sheet 5 to an inner side in the direction of the width of the panel 1 and a part 6a extending from the fixed side part 6b of the second upper face sheet 6 to an inner side in the longitudinal direction of the panel 1 are fixed in a region where they are overlapped. The first upper face sheet 5 and the second upper face sheet 6 have elastic retractility along a fringe part of the opening part 10.



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